ORIGINAL ARTICLE

A study on the depression status of pediatric standardized training residents in COVID-19

Yan Pan*

Department of Pediatrics, the First Affiliated Hospital of Yangtze University, Jingzhou, Hubei Province, China

Received: December 30, 2022 **Accepted:** June 8, 2023 **Online Published:** June 20, 2023
DOI: 10.5430/dcc.v10n1p1 **URL:** https://doi.org/10.5430/dcc.v10n1p1

ABSTRACT

Objective: To analyze the depression status of pediatric standardized training residents in COVID-19.
Methods: The depression status of pediatric residents undergoing standardized training at the First Affiliated Hospital of Yangtze University was investigated using the Self-rated Depression Scale (SDS). Statistical analysis was conducted using R version 3.5.3.
Results: The prevalence of depression was found to be 66.6%. However, no significant statistical associations were observed between depression and various demographic factors, including gender, age, emotional status, educational background, possession of a professional doctor certificate, and monthly income.
Conclusions: The incidence of depressive symptoms amongst pediatric residents undergoing standardized training during the COVID-19 pandemic is substantial, placing them at an elevated risk for depression.

Key Words: COVID-19, Depression status, Pediatric standardized training residents

1. INTRODUCTION

Corona Virus Disease 2019 (COVID-19) pandemic, which originated in Wuhan, China, in late 2019, has spread globally,[1] with some countries having achieved stability while others remain amid an epidemic. The impact of this disease extends beyond physical symptoms to include mental health concerns such as depression, anxiety, and sleep disorders.[2,3] The scholars focused on the medical personnel, specifically the standardized training residents who constitute a distinct cohort. Standardized training is being implemented concurrently with infection prevention and control measures. Owing to heightened competition, inadequate financial resources, academic demands, and familial responsibilities, this group will likely encounter greater psychological distress than their counterparts in the medical field. An Italian study revealed that 84% of standardized training residents experienced anxiety related to the COVID-19 pandemic.[4,5]

The implementation of standardized training in China was initiated belatedly and still needs to be completed, leading to discontent and psychological stress among residents. A 2015 survey in Shenzhen, China, revealed that only 33% of residents were content with the standardized training model. Among the 600 clinical medicine undergraduates, 183 expressed disapproval of the standardized training system, citing financial insufficiency due to inadequate income generated during the training.[6,7]

The onset of the epidemic may exert an adverse influence on the psychological well-being of healthcare practitioners. A greater emphasis should be placed on the mental health of the general populace, with particular attention directed toward pediatric residents. It is of utmost significance to

*Correspondence: Yan Pan; Email: 896249954@qq.com; Address: Department of Pediatrics, the First Affiliated Hospital of Yangtze University, Jingzhou, Hubei Province, China.

scrutinize and enhance the satisfaction levels of residents with the training paradigm and their mental health during the training. Currently, there exists no scholarly literature about the depressive state of pediatric residents amidst the COVID-19 pandemic. This paper endeavors to explore the depressive status of standardized training pediatric residents.

2. MATERIALS AND METHODS

2.1 Survey method

This research employed a questionnaire to disseminate a survey to pediatric residents undergoing standardized training at the First Affiliated Hospital of Yangtze University. The survey was conducted in November 2022, and 18 questionnaires were distributed, with all 18 being returned and deemed valid.

2.2 Survey content

The present study employed the Self-rated Depression Scale (SDS) to evaluate the depression status of pediatric residents undergoing standardized training.[8] The SDS comprises 20 self-assessment items, each of which is rated on a four-point scale, with 10 items reflecting positive scores and 10 articles reflecting negative scores. The total score is calculated by summing the 20 items, while the standard score is derived by multiplying the complete score by 1.25. A standard score of less than 50 indicates the absence of depression, while scores ranging from 50 to 59 indicate mild depression, scores between 60 and 69 indicate moderate depression and scores of 70 or higher indicate severe depression.

2.3 Statistical method

R version 3.5.3 was used for statistical data analysis, including general descriptive analysis and Fisher exact probability, and $p < .05$ was considered statistically significant.

3. RESULTS

3.1 General demographic information

General demographic data of the subjects were obtained from the survey. The pediatric residents in standardized training ranged in age from 23 to 37 (25.00±3.51) years. Sixteen were single, 3 had master's degrees, 13 had medical qualification certificates, and 14 had monthly incomes less than $600 (see Table 1).

Table 1. General demographic information

Item	Classification	Number (n)	Depression (n)
Gender	Male	6	4
	Female	12	8
Age	21-25	15	10
	> 25	3	2
Relationship status	Unmarried	16	11
	Married	2	1
Education	Undergraduate	15	11
	Postgraduate	3	1
Obtaining medical qualification certificate	Yes	13	8
	No	5	4
Monthly income	≤ $600	14	9
	> $600	4	3

3.2 Degree of depression score

Six patients (33.3%) had no symptoms of depression, six patients (33.3%) had mild symptoms of depression, five patients (27.8%) had moderate depression, and one patient (5.5%) had severe depression. The positive rate of depression was 66.6%.

3.3 Fisher exact probability

Fisher's exact probability showed that depression is not related to these factors (gender, age, relationship status, education, obtaining a medical qualification certificate, and monthly income).

4. DISCUSSION

The survey findings indicate that among pediatric residents undergoing standardized training, 66.6% exhibited a positive rate of depressive symptoms, with 33.3% experiencing moderate to severe depression. Although slightly lower than the results reported by Mata et al. (43.2%), this discrepancy may be attributed to variations in research tools, sample size, and regional concentration.[9] Nevertheless, the results underscore the vulnerability of physicians in training to depression,

highlighting the need for researchers and managers to prioritize the mental health status of residents and introduce timely interventions. Other countries worldwide have also found this phenomenon, but they do not specifically study pediatricians.[10–13] Burn-out is a syndrome that is conceptualized as arising from prolonged workplace stress that has not been effectively managed. Three dimensions, namely distinguish it: (1) a sense of energy depletion or exhaustion, (2) an augmented mental detachment from one's job, or feelings of negativism or cynicism concerning one's job, and (3) a decline in professional efficacy. Professions that require a significant degree of emotional labor and empathy place individuals at risk of experiencing burn-out. Resident physicians, who serve as primary caregivers and frequently interact with patients, are particularly susceptible to this phenomenon. Nonetheless, timely identification and appropriate intervention can significantly enhance the value of the formative three-year period in a physician's career.[14]

The present study has determined no statistically significant association between depression and various demographic factors, including gender, age, emotional status, educational background, possession of a professional doctor certificate, and monthly income. In contrast to prior research, the current investigation highlights COVID-19 as the primary contributor to depression among pediatric residents undergoing standardized training. The pandemic-induced social isolation has created an unparalleled stress level, impeding individuals' capacity to engage in work, seek familial support, and participate in community events. In addition to feelings of loneliness and fear of infection, depression has emerged as a meaningful outcome.

Several limitations were present in our study. First, our sample size is small so future studies may need a more precise sampling method. Second, cross-sectional research must make it easier to draw definitive causal conclusions about the pandemic's long-term consequences. Third, results may not apply to all countries because selection bias cannot be excluded.

The results of this study show that the prevalence of depressive symptoms among pediatric residents in standardized training is high, and they are at increased risk of depression. More samples and well-matched groups should be used in future research.

FUNDING

This work was supported by Hubei Pediatric Alliance Medical Research Project (HPAMRP202117).

CONFLICTS OF INTEREST DISCLOSURE

The authors declare they have no conflicts of interest.

REFERENCES

[1] Vindegaard N, Benros ME. COVID-19 pandemic and mental health consequences: systematic review of the current evidence. Brain Behav Immun. 2020; 89: 531-542. PMid:32485289. https://doi.org/10.1016/j.bbi.2020.05.048

[2] Liang L, Ren H, Cao R, et al. The effect of COVID-19 on youth mental health. Psychiatr Q. 2020; 91: 841-852. PMid:32319041. https://doi.org/10.1007/s11126-020-09744-3

[3] Hossain MM, Tasnim S, Sultana A, et al. Epidemiology of mental health problems in COVID-19: a review. F1000 Research. 2020; 9: 636. PMid:33093946. https://doi.org/10.12688/f1000research.24457.1

[4] Walton M, Murray E, Christian MD. Mental health care for medical staff and affiliated healthcare workers during the COVID-19 pandemic. Eur Heart J Acute Cardiovasc Care. 2020; 9: 241-247. PMid:32342698. https://doi.org/10.1177/2048872620922795

[5] Bitonti G, Palumbo AR, Gallo C, et al. Being an obstetrics and gynaecology resident during the COVID-19: Impact of the pandemic on the residency training program. Eur J Obstet Gynecol Reprod Biol. 2020; 253: 48-51. PMid:32771888. https://doi.org/10.1016/j.ejogrb.2020.07.057

[6] Sun HL, Xia JJ, Wang K, et al. Satisfaction and selfassessment effect of clinical resident standard training in Shenzhen city. Chin J Health Policy. 2015; 8: 68-73.

[7] Wei R, Yin WQ, Liu YH, et al. Analyzing the influence of resident standardized training system on the career planning of medical students. Chin Health Service Manage. 2017; 34: 51-55.

[8] Davis AK, Barrett FS, May DG, et al. Effects of Psilocybin-Assisted Therapy on Major Depressive Disorder: A Randomized Clinical Trial.JAMA Psychiatry. 2021; 78: 481-489. PMid:33146667. https://doi.org/10.1001/jamapsychiatry.2020.3285

[9] Mata DA, Ramos MA, Bansal N, et al. Prevalence of depression and depressive symptoms among resident physicians: a systematic review and Meta-analysis. J Am Med Assoc. 2015; 314: 2373-2383. PMid:26647259. https://doi.org/10.1001/jama.2015.15845

[10] Sil A, Das A, Jaiswal S, et al. Mental health assessment of frontline COVID-19 dermatologists: A Pan-Indian multicentric cross-sectional study. Dermatol Ther. 2020; 33: e13884. https://doi.org/10.1111/dth.13884

[11] Das A, Sil A, Jaiswal S, et al. A Study to Evaluate Depression and Perceived Stress among Frontline Indian Doctors Combating the COVID-19 Pandemic. Prim Care Companion CNS Disord. 2020; 22: 20m02716. PMid:33031651. https://doi.org/10.4088/PCC.20m02716

[12] Moldovan F, Gligor A, Moldovan L, et al. The Impact of the COVID-19 Pandemic on the Orthopedic Residents: A Pan-Romanian Survey. Int J Environ Res Public Health. 2022; 19: 9176. PMid:35954536. https://doi.org/10.3390/ijerph19159176

[13] Steil A, Pereira Tokeshi AB, Bernardo LS, et al. Medical residents' mental distress in the COVID-19 pandemic: An urgent need for mental health care. PLoS One. 2022; 17: e0266228. PMid:35358253. https://doi.org/10.1371/journal.pone.0266228

[14] Priyam P, Sil A. Burnout: The Resident Evil - Perspectives from the Horses' Mouth! Indian Dermatol Online J. 2020; 11: 816-817. PMid:33235854. https://doi.org/10.4103/idoj.IDOJ_262_20